

CLAIMS

What is claimed is:

1. A tool head, comprising:

a holder for accommodating a tool,

a plate, and

two actuators, each of said two actuators including:

a body attached to said plate,

a front plate having a first web projecting from the front plate and connecting the front plate to the holder,

second webs connecting the front plate to the body, and

a first piezoelectric drive, said first piezoelectric drive clamped in a cavity formed between the front plate and the body,

wherein an alternating voltage signal applied to said first piezoelectric drive causes said front plate to oscillate relative to said body with oscillations aligned in a longitudinal direction of said second webs, and

wherein a direct voltage applied to said first piezoelectric drive causes said front plate to move relative to said body in the longitudinal direction of said second webs.

2. A tool head according to claim 1, further comprising:

a second piezoelectric drive, wherein said second piezoelectric drive is attached to said plate on a side thereof opposite a side facing said two actuators.

3. A method for using a tool head, the tool head including:

a holder for accommodating a tool,

a plate, and

two actuators, each of said two actuators including:

a body attached to said plate,

a front plate having a first web projecting from the front plate and connecting the front plate to the holder,

second webs connecting the front plate to the body, and

a first piezoelectric drive, said first piezoelectric drive clamped in a cavity formed between the front plate and the body,

the method comprising:

applying an alternating voltage signal to the first piezoelectric drive to cause the front plate to oscillate relative to the body with oscillations aligned in a longitudinal direction of the second webs, and

applying a direct voltage to the first piezoelectric drive to cause the front plate to move relative to the body in the longitudinal direction of the second webs.

4. A method for using a tool head, the tool head including:

a holder for accommodating a tool,

a plate, and

two actuators, each of said two actuators including:

a body attached to said plate,

a front plate having a first web projecting from the front plate and connecting the front plate to the holder,

second webs connecting the front plate to the body,

a first piezoelectric drive, the first piezoelectric drive clamped in a cavity formed between the front plate and the body, and

a second piezoelectric drive, the second piezoelectric drive attached to the plate on a side thereof opposite a side facing the two actuators,  
the method comprising:

applying an alternating voltage signal to the first piezoelectric drive to cause the front plate to oscillate relative to the body with oscillations aligned in a longitudinal direction of the second webs, and

applying a direct voltage to the first piezoelectric drive to cause the front plate to move relative to the body in the longitudinal direction of the second webs.

5. The method of claim 3, further comprising:

placing a capillary tool into the tool holder.

6. The method of claim 4, further comprising:

placing a capillary tool into the tool holder.

7. The method of claim 3, further comprising:

placing a pin into the tool holder.

8. The method of claim 4, further comprising:

placing a pin into the tool holder.

9. The method of claim 3, further comprising:

placing a stamp containing a surface with micro-mechanical structures.

10. The method of claim 4, further comprising:

placing a stamp containing a surface with micro-mechanical structures.